

## **Town of Knightdale Request for Proposals – Fabrication and Installation of Wayfinding Signs**

April 14, 2016

Update April 25: Please see addendum one regarding number of signs. We are seeking 10 proximity signs and six (possibly seven) trailblazing signs.

Questions, contact Brian Bowman, [brian.bowman@knightdalenc.gov](mailto:brian.bowman@knightdalenc.gov). Deadline for questions is May 2nd.

Sealed bids will be received until Friday, May 6<sup>th</sup> at 2pm. They should be sent to:

Knightdale Town Hall  
950 Steeple Square Court  
Knightdale, NC 27545  
Attention Brent Quick, Purchasing Agent.

The bids will be opened on Wednesday, May 11<sup>th</sup>, in the Council Chambers at Knightdale Town Hall.

The Town of Knightdale seeks a qualified vendor who can fabricate and install 15-17 wayfinding signs in designated places. Design of the signs is already complete and included in this document. Fabrication of signs must be exactly as designed. There are two versions – the smaller proximity signs and the taller trailblazing signs.

Vendors shall submit total costs for fabrication and installation of signs and poles in bid. Bid will also include individual cost per sign. Winning vendor will be equipped to fabricate and install all signs no later than August 30<sup>th</sup>, 2016.

### **Vendor Requirements**

Submit a warranty guarantee with the submittal of the bid. Selected vendor shall provide a five (5) year written warranty on all materials and workmanship for sign structures.

Submit a list of projects your firm has completed within the past five (5) years that are similar to that requested in this RFP. Include customer name, email, address, telephone number, and address for each reference.

Vendor must meet or exceed all requirements from NCDOT and MUTCD for insurance, lane closures, traffic control, etc.

Vendor must have completed Iran Divestment Act certification.

Vendor must sign non-collusion affidavit.

### **Specifications**

Must adhere to all specifications listed in the designs, including:

- Reflective DuPont vinyl on most of the front-facing elements
- Font: Highway Gothic
- Sign materials
- Sizes of components and methods of attachment for signs and poles
- MUTCD approved breakaway bolts for pole attachments

The Town has received preliminary approval from NCDOT for the approximate locations. The vendor must ensure that the Town and NCDOT are satisfied with placement and installation. The Town will provide site survey information for use with installation.

### **Preparation for Installation**

Selected vendor shall provide adequate temporary support to assure the structural value and integrity of the affected portion of the work during storage of the completed signs prior to installation.

The Town reserves the right to waive minor irregularities. The Town may cancel this RFP or reject any or all proposals in whole or in part. Should the Town determine in its sole discretion that only one bidder is fully qualified, or that one bidder is clearly more qualified than any other under consideration, a contract may be awarded to that bidder without further action.

Bidder assumes all costs of preparation of the proposal and any presentations necessary to the proposal process.

MWBE owned businesses are encouraged to apply.

Addendum one: We are seeking 10 proximity signs and six (possibly seven) trailblazing signs.

Tall Knightdale Proximity Sign Location: Knightdale NC along First Street and other Primary roads

Typeface: Highway Gothic  
Principal Legend guide shall be 6.0" Height  
All letters and numbers 4.5" Capitals Height and 5.6" Height for all lower case  
KNIGHTDALE letters 4  
Identification Enhancement marker meets Standard 42 and Guidance 42

Only three destinations listed /sign to meet NCDOT MUTCO  
3:1 legend to background luminance ratio requirement is meet.

ASTM A325/A449 -TYPE 1 SPECIFICATIONS

MATERIAL: MEDIUM CARBON STEEL, QUENCHED AND TEMPERED.

MINIMUM TENSILE STRENGTH: 120,000 PSI FOR Ø1/4 TO Ø1

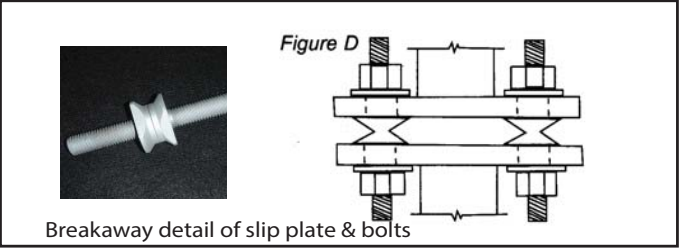
MINIMUM YIELD STRENGTH: 92,000 PSI FOR Ø1/4 TO Ø1

MINIMUM PROOF STRENGTH: 85,000 PSI FOR Ø1/4 TO Ø1

ROCKWELL CORE HARDNESS: C25 (MINIMUM) TO C33 (MAXIMUM) FOR Ø1/4 TO Ø1

BOLTS LESS THAN 3 TIMES THE DIAMETER IN LENGTH AND STUDS LESS THAN 4 TIMES THE DIAMETER IN LENGTH SHALL HAVE HARDNESS VALUES NOT LESS THAN MINIMUM AND NOT MORE THAN MAXIMUM.

BOLTS 3 TIMES THE DIAMETER IN LENGTH AND OVER ARE NOT REQUIRED TO MEET MINIMUM HARDNESS REQUIREMENTS.



Breakaway detail of slip plate & bolts

Front

BACK

Designed per the North Carolina State Building Code - 2015 Edition & IBC 2009  
Snow Loads:  
Ground Snow Load.....Pg-15 psf  
Snow Exposure Factor...Ce=1.0  
Snow Load Importance..Is=1.1  
Thermal Factor.....Ct=1.0

Wind Loads:  
Basic Wind Speed.....95 mph  
Wind Importance Factor..I=1.15  
Wind Exposure.....C  
Gust Factor.....0.85

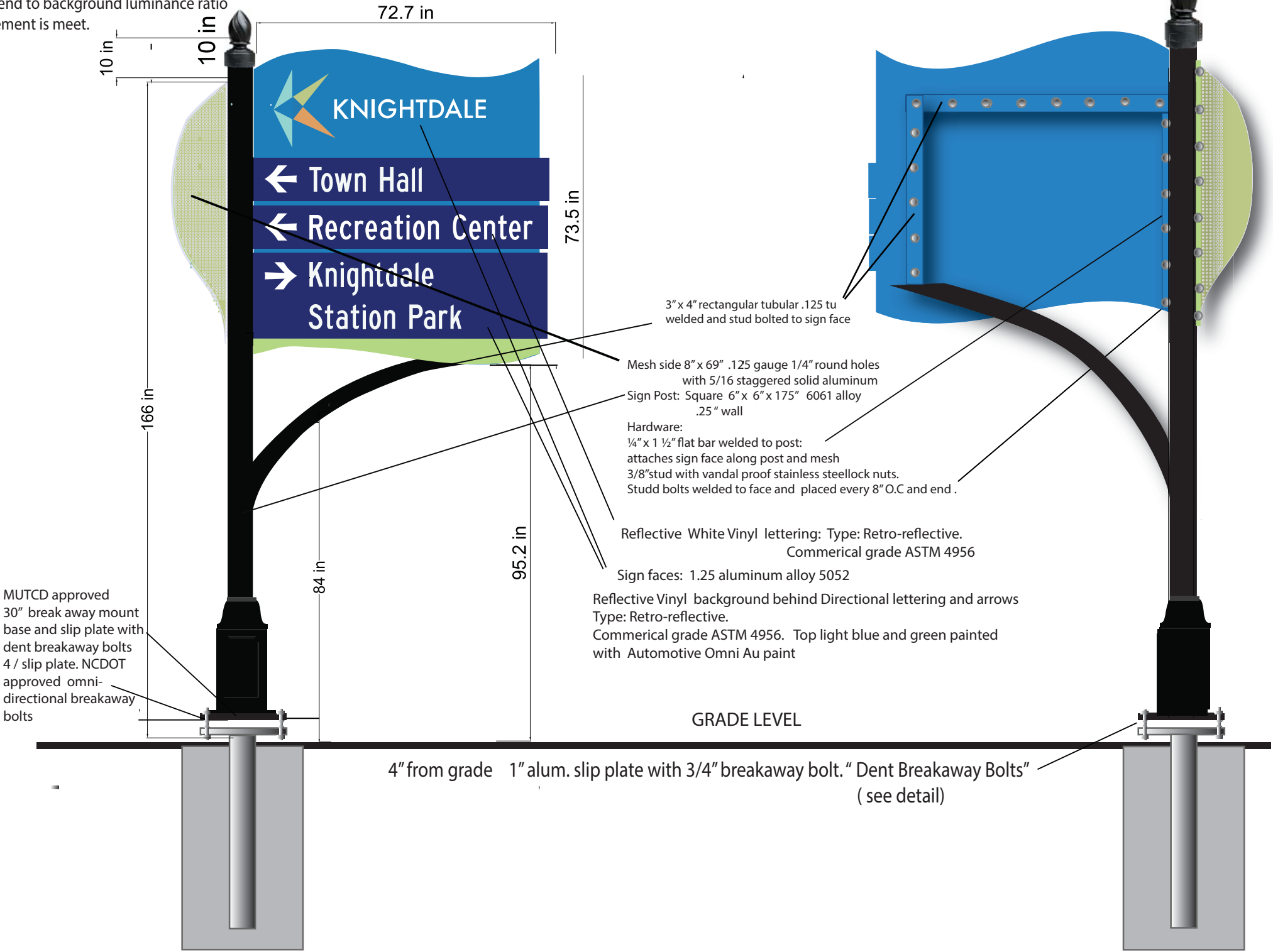
Exterior Components designed in accordance with applicable provisions of the ASCE 7-10

General Notes:

- 1.) Minimum concrete strength shall be 3,000 psi
- 2.) Aluminum Requirements:
  - (a) Tubing, Plates, rolled shapes and bars shall be 1/8"thk. wall min. 6061-T6, or equal, unless otherwise noted.
  - (b) All Aluminum bolted connections shall be made with Stainless Steel A320 bolts or equivalent
  - (c) Field connections and damaged or abraded areas of protective coating shall be touch-up painted with compatible material.
  - (d) All field welds shall comply with AWS code for procedures, appearance and quality of welds.
  - (e) Welding shall be in accordance with AWS D1.2
  - (f) Aluminum alloy filler 4043 shall be used in all structural welds
  - (g) Fillet weld size shall not exceed thinnest member thickness of joined sections.
  - (h) Welding process GMAW or GTAW shall be in accordance with AWS D1.2
  - (i) Provide neoprene gaskets between dissimilar metals if/where applicable
- 3.) Foundation Anchor Bolts to be A36 Minimum.
- 4.) Concrete design & construction to be in accordance w/ ACI 318-08
- 5.) Concrete poured into constrained earth excavations must cure under proper conditions for 4 days prior to sign box installation. (Exception: if the overall height of the sign is less than 20 feet and the sign pole is adequately braced against wind loads for a minimum of 4 days, the box may be installed the same day as the footing is poured.
- 6.) For pier and caisson footings, concrete must be poured against undisturbed earth (Backfill is unacceptable).
- 7.) Maintain a minimum 3" cover over all embedded steel (Not applicable to direct burial footings) Rebar is not required for direct burial footings.
  - Anchor Bolts without rebar shall have a minimum Welded Wire Mesh Reinforcement. Install 6x6 (WWM), 8.5 to 11 gauge, in circular pattern 4 inch offset from footing perimeter min., 3" clearance from top and bottom. Anchor bolts shall be tied to the WWM.
- 8.) Provide a minimum of 6" cover between bottom of support pole and bottom of concrete footing on all direct burial footings, unless otherwise noted.
- 9.) If clay, silt or organic soil properties are present upon excavation, it is the contractor's responsibility to contact Murdoch Engineering for design modification.
- 10.) Galvanic protection is required where dissimilar metals contact.
- 11.) Galvanic protection is also required where Aluminum Contacts Concrete Coat with Bituminous material where Alum. Contacts Concrete.

Engineers Notes:

- Alum. Main Tube to be 6x6x1/4" Alum. Tube welded to
  - 16"x16" x 1" Thk. Alum. Plate connected to match plate of
  - 16"x16" x 1" Thk. Steel Plate with Four(4) 3/4" Diam. Breaksafe bolts. @12" O.C.
  - Bottom Support tube welded to bottom plate to be 6x6x3/16" Steel Tube
- Footing Options:**
- 1.) 36" Diam. x 5'-7" Deep below grade
  - 2.) 36" x 36" x 5'-0" Deep below grade
  - 3.) 48"x48" x 4'-6" Deep below grade
- This revised drawing replaces all drawings previously dated pylons engineering by my office for this location.



Murdoch Engineering  
2 Hummingbird Ct.  
Howell, New Jersey 07731  
(973)-570-8215  
Rev. 11/11/15  
Jere Murdoch, P.E.  
Professional Engineer  
NC P.E. License #038824



Tall Knightdale Trailblazer Sign Location: Knightdale NC along Highway 64

Typeface: Highway Gothic  
Principal Legend guide shall be 7.25" Height  
All letters and numbers 7.25" Capitals Height  
and 5.6" Height for all lower case  
KNIGHTDALE letters 5.4"

Identification Enhancement marker  
meets Standard 42 and Guidance 42

Only three destinations listed /sign  
to meet NCDOT MUTCO

3:1 legend to background luminance ratio  
requirement is meet.

Right of Way . Three signs

ASTM A325/A449 -TYPE 1 SPECIFICATIONS

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Designed per the North Carolina  
State Building Code - 2015 Edition &  
IBC 2009

Snow Loads:

Ground Snow Load.....Pg-15 psf

Snow Exposure Factor...Ce=1.0

Snow Load Importance..Is=1.1

Thermal Factor.....Ct=1.0

Wind Loads:

Basic Wind Speed.....95 mph

Wind Importance Factor..I=1.15

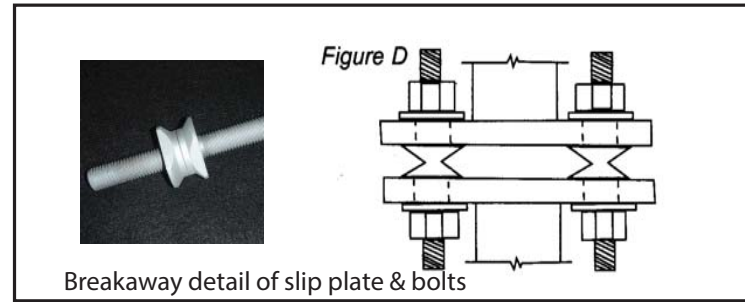
Wind Exposure.....C

Gust Factor.....0.85

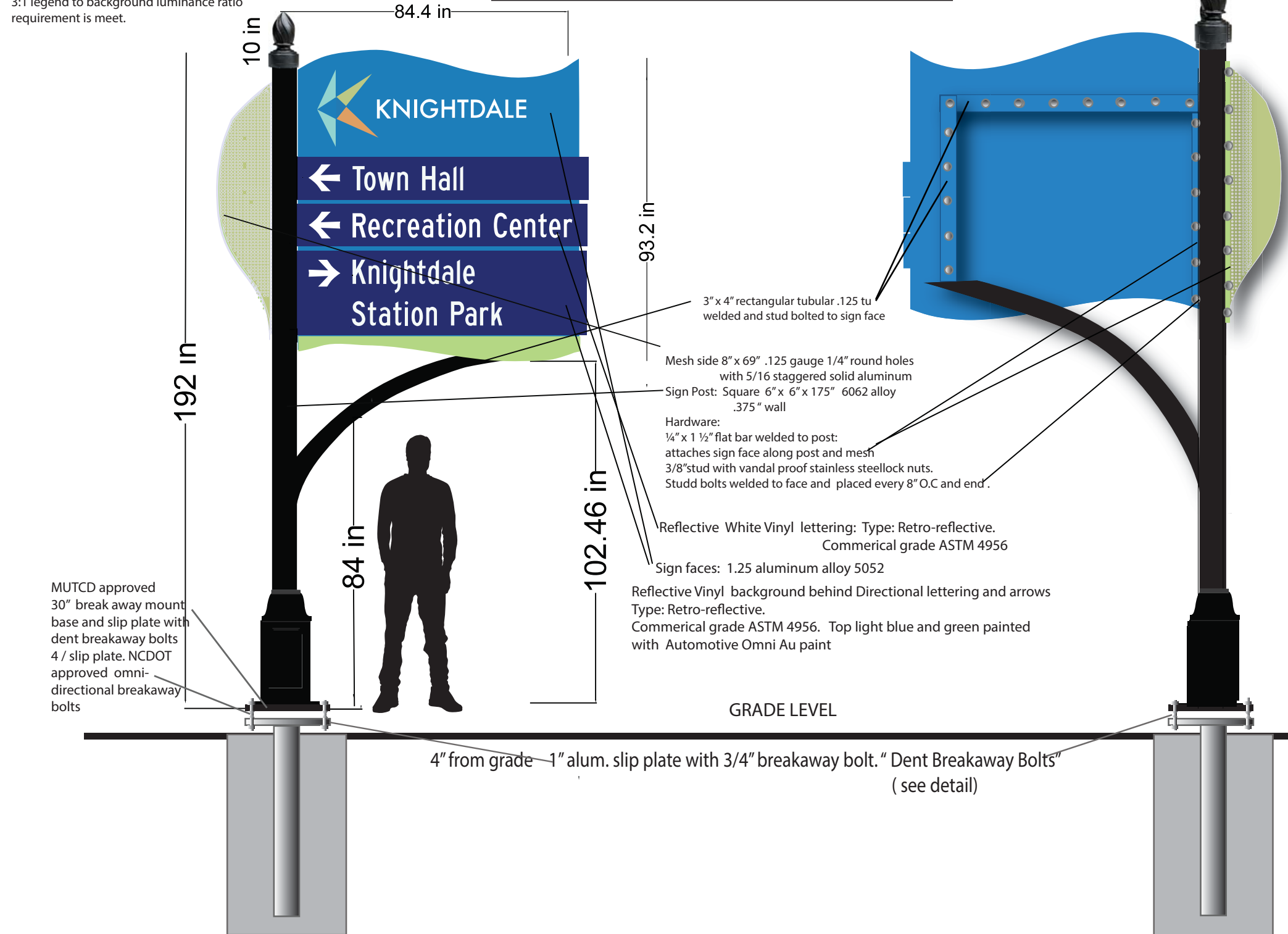
Exterior Components designed in  
accordance with applicable provisions  
of the ASCE 7-10

Engineers Notes:

- Alum. Main Tube to be 6x6x3/8" Alum. Tube welded to
  - 16"x16" x 1.25" Thk. Alum. Plate connected to match plate of
  - 16"x16" x 1" Thk. Steel Plate with Four(4) 3/4" Diam. Breaksafe bolts. @12" O.C.
  - Bottom Support tube welded to bottom plate to be 6x6 x 3/8" Steel Tube
- Footing Options:**
- 1.) 36" Diam. x 6'-3" Deep below grade
  - 2.) 36" x 36" x 5'-6" Deep below grade
  - 3.) 48"x48" x 5'-0" Deep below grade
- This revised drawing replaces all drawings previously dated pylons engineering by my office for this location.



Breakaway detail of slip plate & bolts



GRADE LEVEL

4" from grade 1" alum. slip plate with 3/4" breakaway bolt. "Dent Breakaway Bolts"  
(see detail)



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# OMNI - DIRECTIONAL BREAK AWAY BOLT DETAILS FOR TALL PROXIMITY SIGN

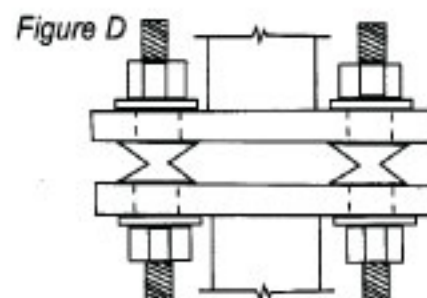
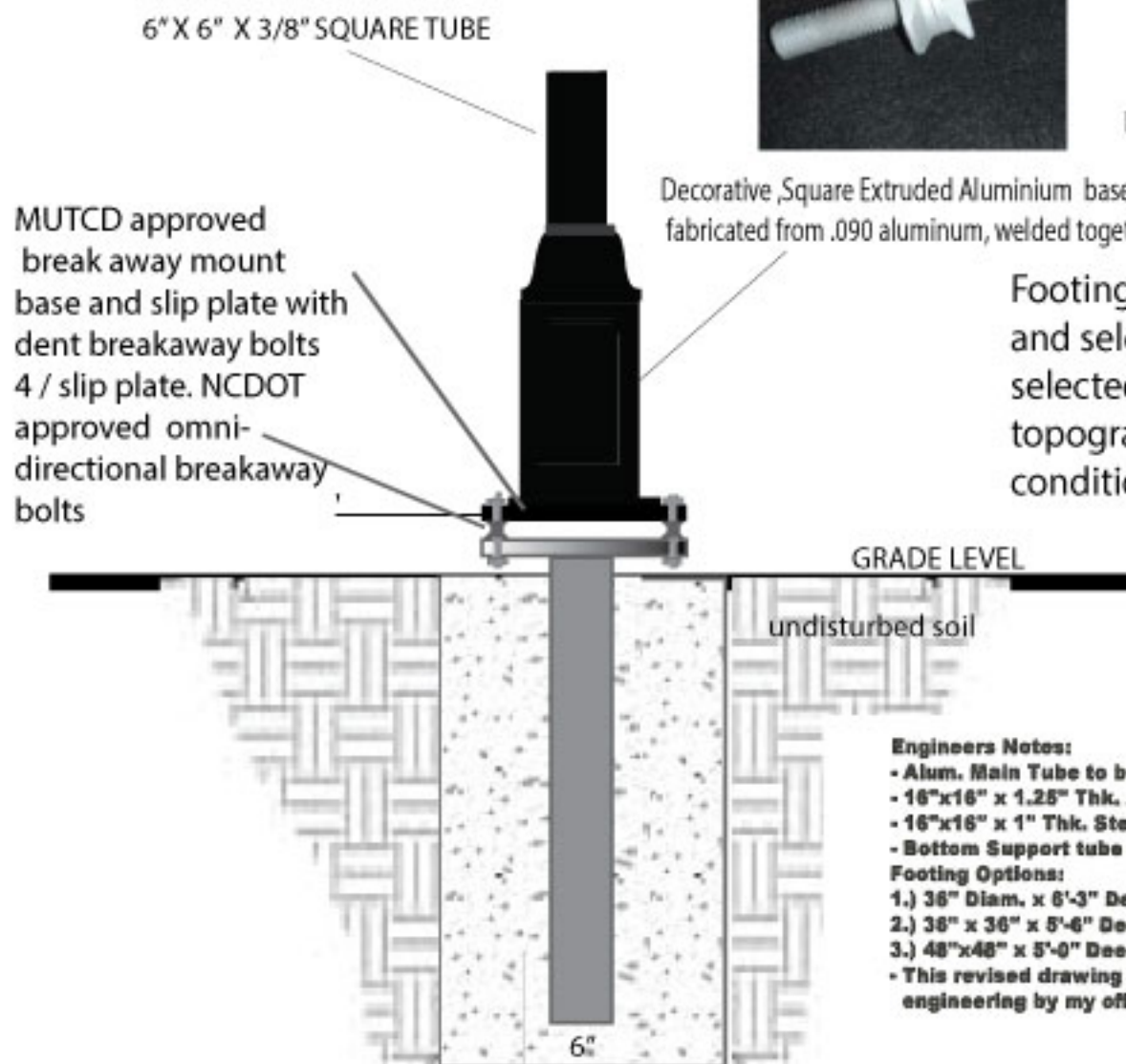


Figure D  
Breakaway detail of slip plate & bolts

Footings dimensions listed below and selection of footing to be selected based on location of sign, topography, obstructions and soil conditions.

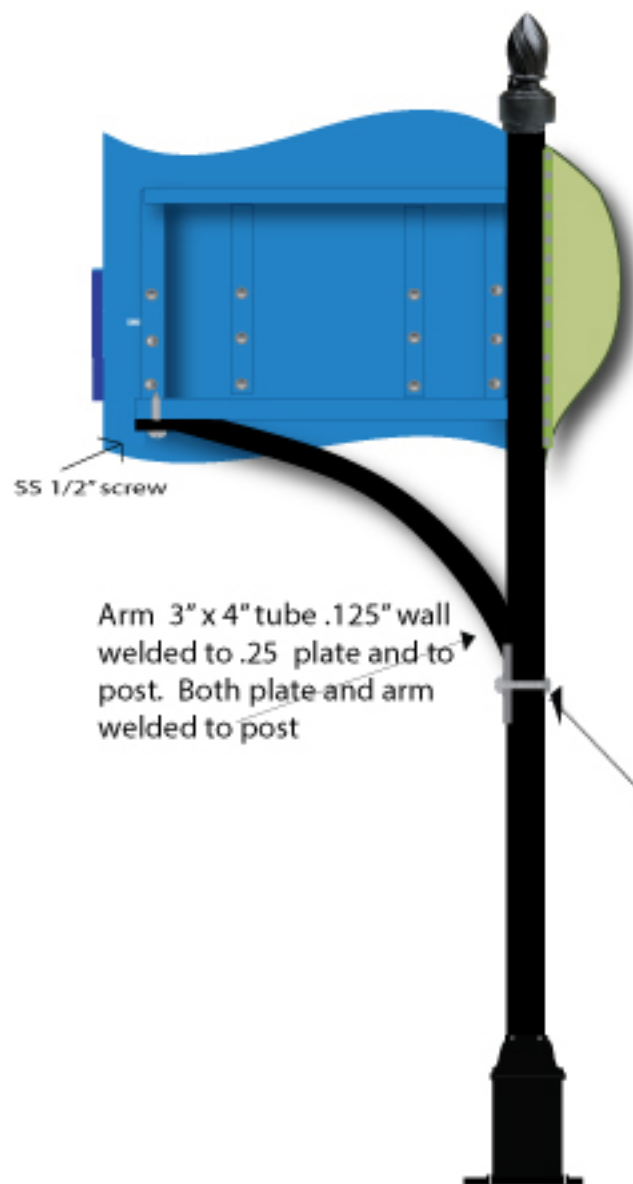
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# METHOD OF ATTACHMENT OF BLACK POST FRAME TO SIGN BACKER FOR TRAILBLAZER AND PROXIMITY SIGNS



Sign backer panel .125 6062 alloy with welded horizontal and vertical framework of 2" X 4" x .25 tube.(used to bolt changeable dark blue panels to sign backer ).

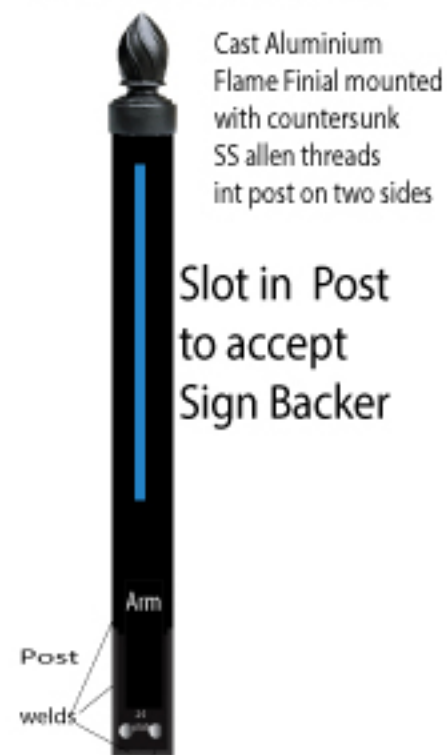
Mesh side 8" x 69" .125 gauge 1/4" round holes with 5/16 staggered solid aluminum.  
Mounting details on Sign Backer Mounting Details//

Sign Post: Square 6" x 6" square post 6062 alloy

1/2" x 7" SS Carriage Bolt with lock washer.nut thr bolt into .25 plate welded to arm. Quantity of two

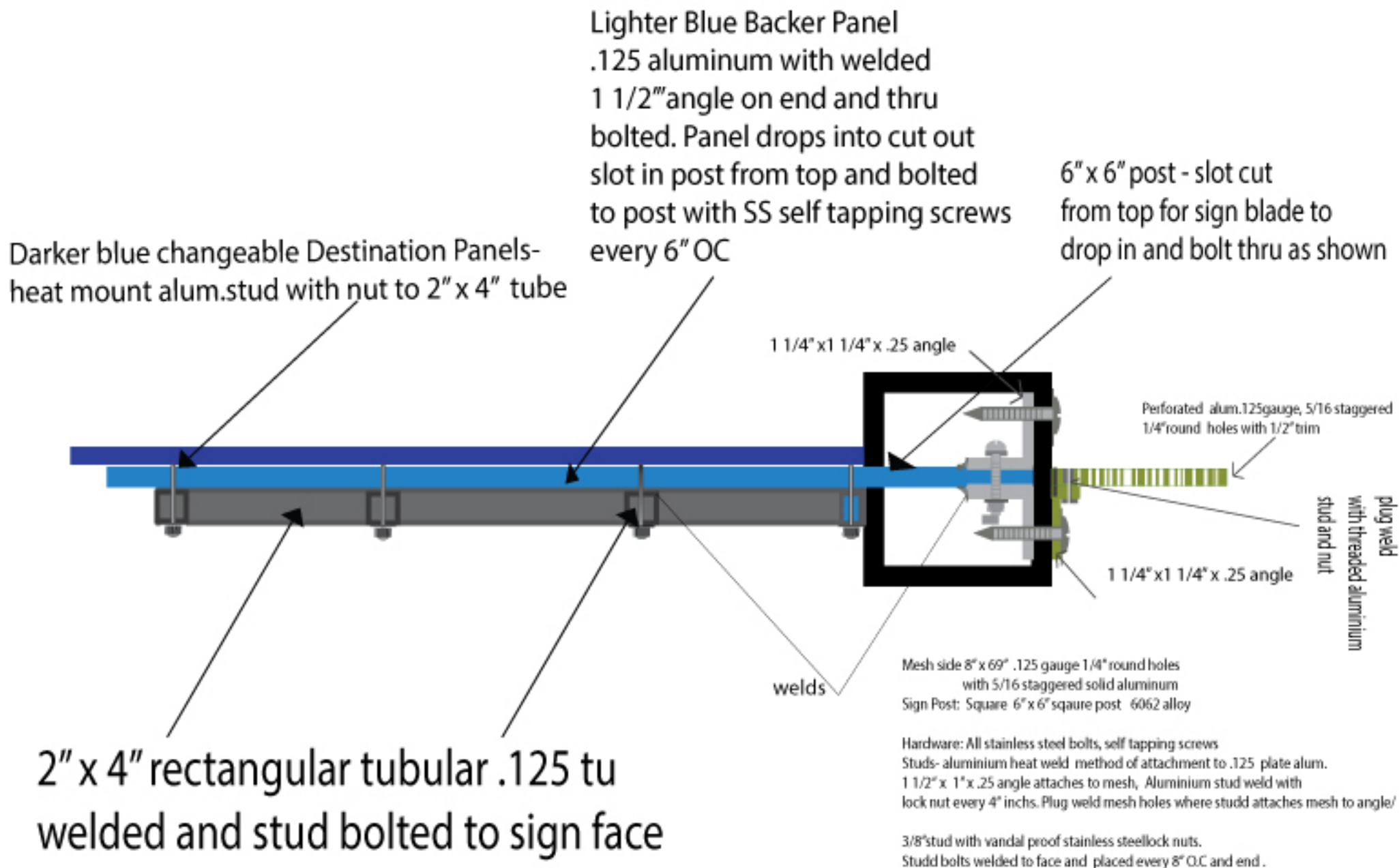
Decorative plate-aluminium weld base. Clam shell mount with SS 1/4" countersunk Allen Head bolts into post and base plate.

Enlarge side view of Post





# Sign Backer and Changeable Panels Mounting Method to Sign Post



# OMNI - DIRECTIONAL BREAK AWAY BOLT DETAILS FOR TALL TRAILBLAZER SIGN

6" X 6" X 3/8" SQUARE TUBE

MUTCD approved  
break away mount  
base and slip plate with  
dent breakaway bolts  
4 / slip plate. NCDOT  
approved omni-  
directional breakaway  
bolts

Decorative Square Extruded Aluminium base- not structural  
fabricated from .090 aluminum, welded together.

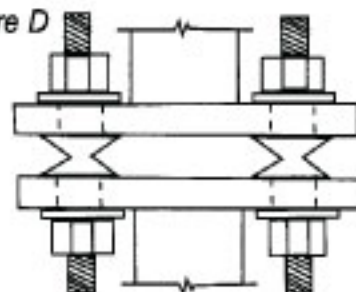
GRADE LEVEL

undisturbed soil

6"



Figure D



Breakaway detail of slip plate & bolts

Footing dimensions listed below  
and selection of footing to be  
selected based on location of sign,  
topography, obstructions and soil  
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**NON-COLLUSION AFFIDAVIT**  
STATE OF NORTH CAROLINA  
TOWN OF KNIGHTDALE

\_\_\_\_\_, being first duly sworn, deposes  
and says that:

1. He/She is the \_\_\_\_\_ of \_\_\_\_\_,  
the bidder that has submitted the attached bid;
2. He/She is fully informed respecting the preparation and contents of the attached bid and of all  
pertinent circumstances respecting such bid;
3. Such bid is genuine and is not a **collusive** or **sham** bid;
4. Neither the said bidder nor any of its officers, partners, owners agents, representatives,  
employees, parties of interest, including this affiant, has in any way colluded, conspired, connived  
or agreed, directly or indirectly, with any other bidder, firm or person to submit a **collusive** or  
**sham** bid in connection with the contract for which the attached bid has been submitted or to  
refrain from bidding in connection with such contract, or has in any manner, directly or indirectly,  
sought by agreement or collusion or communication or conference with any other bidder, firm or  
person to fix the price or prices in the attached bid or of any other bidder, or to fix any overhead,  
profit or cost element of the bid price of any other bidder or to secure through collusion,  
conspiracy, connivance or unlawful agreement any advantage against the County of Durham or  
any person interested in the proposed contract; and
5. The price or prices quoted in the attached bid are fair and proper and are not tainted by any  
collusion, conspiracy, connivance or unlawful agreement on the part of the bidder or any of its  
agents, representatives, owners, employees, or parties in interest, including this affiant.

AFFIANT

\_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

TITLE  
Subscribed and sworn before me,  
this \_\_\_\_\_ day of 20\_\_\_\_.

Notary Public  
My Commission Expires